Stuart Yeadon
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Professional Summary

I am an aspiring hardware systems engineer and kernel programmer with a deep interest in processor architecture, memory management, and low-level performance tuning. My 11 years of hands-on experience at Apple's Genius Bar provides me with a strong foundation in complex technical troubleshooting and a unique understanding of systems from the user's perspective.

With a proficiency in C, Python, and WGSL/WebGPU, I am driven to build efficient, foundational systems that power applications. I have demonstrated a strong commitment to learning through my recent self-directed qualifications in Computer Science, Embedded C, and Machine Learning, fuelled by my belief *you can't learn less*.

Work Experience

Apple Genius 2014 - Present

Role Requirements:

- Provides frontline technical support at the Genius Bar for all Apple products & services
- Alleviates customer concerns, tackling emotional situations with empathy
- Efficiently finds solutions to deliver 3-5 appointments per hour
- Physically repairs a wide range of Apple hardware from Intel to Apple Silicon
- Provides mentorship and technical assistance to team members
- Uses clear language to explain technology to an audience of varying skillset

Highlights:

- Genius Training at Stockley Park, London
- Being part of historic product launches such as Apple Watch, iPhone 6+ and Vision Pro
- Identifying a fault in a repair part, leading to an Apple Engineering redesign.
- Implementing a store-wide network solution for 10x faster downloads.
- Being a part of Apple Touchwood's New Store Opening and cabling the Repair Room

Skills: Technical Support - Problem Solving - Customer Service - Mentoring - Nimble Learning - Teamwork

Apple Store Training Career Experience Jan - Jun 2024

Role Requirements:

- Facilitated Apple's training content for 80+ Apple Store team members.
- Self managed and planned time effectively to work training into existing store schedules
- Partnered closely with management to identify specific learning opportunities.
- Delivered new employee training to instil and teach Apple's values and technical process

Highlights:

- Self-teaching advanced Numbers formula for effective data reporting
- Listening to and understanding the learning challenges of all team members
- Learning JavaScript for Automation to script team member's training reports

Skills: Time Management - Planning - JavaScript - Training Facilitation - Spreadsheets - Public Speaking

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PROJECTS - AVAILABLE AT SYEADON.INFO/SOFTWARE

Snowflake - A Python User Interface Tool Powered by WebGPU

Developing an efficient user interface framework in Python using WebGPU with shader driven animation, high-volume instance rendering (tens of thousands of elements per frame), and efficient buffer and memory management reducing the python call frame. It harnesses the power of native GPU with the ease and comfort of writing in Python.

Key features:

- Intuitive OOP structure for convenient scene mapping and native python buffer updates
- Custom compute/render pipelines via wgpu-py for performant animation and rendering
- Magic method interpreter with a 16 byte opcode buffer bypassing AST node inspection
- Direct bytearray's to buffer, preventing third party libraries adding extra Python call frames.
- Ping-pong buffering for optimal performance and no race conditions
- In Progress: Stable NDC SDF Font Rendering System for a unified coordinate system

Skills: WebGPU - Graphics Shaders - Render Pipelines - Buffer Alignment - Parallelism - Systems Design

PDF-to-eBook Conversion with Machine Learning Optimisation

Developing a program to convert PDFs into eBook-friendly formats, with a focus on accurate text and style extraction, efficient layout clustering, and device-friendly rendering. Targeting scientific papers and scanned documents where conventional converters fail.

Key features:

- Automatic scanned PDF OCR detection and text handling for wider document support
- Reimagined k-prototypes clustering of document blocks using mixed numerical and categorical features for optimised text and style grouping.
- SIMD-Accelerated C Extension: Leveraged Apple Silicon NEON to accelerate categorical dissimilarity, achieving 1.8–3.4× speedup over the native k-means library.
- Thread-Safe Parallelism: Integrated pthread-based thread-local storage and mutexes for safe concurrent SIMD execution.
- In Progress: Disassembly of K Prototypes grouping into a correct style placement

Skills: PyMyPDF - Numpy - K Means - C Python Extensions - SIMD Instruction - Machine Learning

EDUCATION

Certificates

Computer Science
View Certificate

Intro to Neural Networks
View Certificate

Mastering Embedded Systems
View Certificate

Embedded Systems using C
View Certificate

Formal Education

Bath Spa University - 2012
Commercial Music - BA (Hons) 2:2

Bishop Vesey's Grammar School
GCSEs and A Levels.
Maths, Physics, Music & Art,
Biology, Chemistry, French,
English Lit / Lang, General Studies